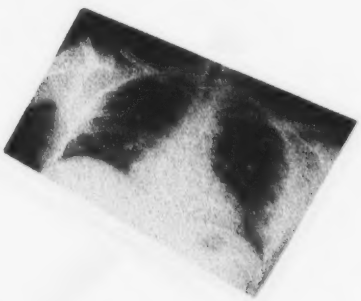
Alberta Telehealth

Business Plan 2006-2009



ISBN 978-0-7785-6089-0 (Report)
ISBN 978-0-7785-6090-6 (PDF)

Alberta Telehealth | Alberta | Provincial Telehealth Committee | Alberta Telehealth Coordinators Committee

Preface

The Provincial Telehealth Committee (PTC) provides strategic direction for telehealth in Alberta. As such, the 2006-2009 Alberta Telehealth Business Plan has been developed by the PTC with input from the Alberta Telehealth Coordinators' Committee, health regions and boards, Alberta Health and Wellness, and other stakeholders.

The plan articulates a desired future state, one in which the health system is capitalizing on opportunities provided by telehealth and using the technology to make gains in achieving its access, health human resource, and quality priorities.

Some of what the future state envisions is already being done on a smaller scale. This plan sets out strategies and activities to support this ongoing work and the expansion of network applications. Not all potential points of improvement for telehealth service delivery are listed, and not all elements of the desired future state are likely to be achieved by 2009. Rather, a plan with priorities that have been developed and agreed upon by stakeholders from the front lines of health service delivery, administration, and technology departments is proposed.

This document has been designed to provide even newcomers to telehealth with a summary of telehealth in Alberta thus it also contains a comprehensive overview of the current state.

Several supporting documents are referenced in the appendices and are available to provide additional background as the reader may wish.

Provincial Telehealth Committee
November 2006

Table of Contents[1]

The Scope of Telehealth 2

Executive Summary 3

Alberta Telehealth Vision, Mission, and Principles 6

- Vision Statement 6
- Mission 6
- Guiding Principles 6

The Desired Future State of Telehealth in Alberta 7

- Improved Access 7
- Enhanced Clinical Integration 7
- Support for Collaboration 7
- Enhanced Knowledge Base and Health Workforce 7
- Integration with Health System Operations 8
- Technology Adoption and Integration 8

The Current State of Telehealth in Alberta 9

- Alberta Telehealth's Beginnings 9
- An Overview of Alberta's Telehealth Network 9
- Alberta's Health System 10

Clinical Program Areas 11

- Partnerships and Alliances 12
- Governance 12
- Clinical Telehealth Services 13
- Education and Administrative Uses 14

Assessing Telehealth's Impact on Alberta's Health System 15

Technology and Telehealth 17

- Telehealth Integration into Day to Day Operations 17
- Telehealth Integration with the Electronic Health Record 17
- Telehealth Integration with an Internet Protocol (IP) Environment 17

Aligning Telehealth with Health System Priorities 18

Pursuing the Vision: Four Areas of Strategic Opportunity 19

- Visionary Leadership 19
- People-Centred Services 21
- Integrated Programs and Change Management 23
- Leveraging Technology Infrastructure 25

Appendices 27

- A: Glossary 27
- B: Clinical Programs in Alberta: Project Portfolio and Clinical Grant Fund 28
- C: Business Plan Companion Projects 30

[1] **Note**: Throughout this document the term "health regions and boards" is used and refers to both the provincial health authorities and the regional health authorities.

THE SCOPE OF TELEHEALTH

For the purposes of this business plan, telehealth has been defined as the use of technology to support the delivery of health services, education, and administrative activities at a distance:

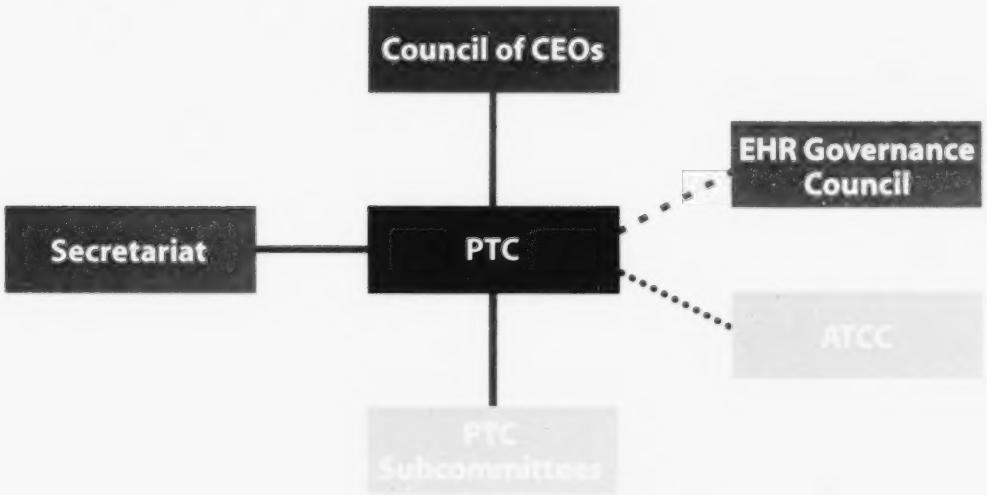
- It includes direct clinician / client consultations via videoconferencing as well as the transmission of images to specialists for diagnostic interpretation.
- It brings together people working on administrative projects such as business planning or negotiations.
- It is successfully being used to deliver education and training.

Clinical Focus: The 2003-2006 Provincial Telehealth Strategic Business Plan made implementation of clinical services a priority, and Clinical Grant Fund investments have since been made in approximately 50 clinical telehealth programs. Clinical telehealth development continues and is reflected in a portfolio of projects that are either planned or underway (Appendix B). As services have been implemented, health regions and boards have incorporated ongoing telehealth costs into their budgets. Future grant funding therefore could give priority to the initiation of new projects for investigating and documenting the benefits of telehealth or for furthering technological innovation.

Collaboration: Telehealth in Alberta is helping bring together service sectors. Alberta Children's Services has portals and participates in the web-based, provincial VC Scheduler. In addition to being an effective use of public resources, telehealth is building service bridges and supports coordinated and integrated responses to client and patient needs among the sectors.

Technology: Telehealth is part of a broadly based and inclusive health information technology strategy in Alberta including the Electronic Health Record (EHR); Diagnostic Imagining (DI); Picture Archiving and Communications System (PACS); and HealthLink..

Accountability: Alberta Telehealth is a collective provincial initiative involving the health regions and boards and Alberta Health and Wellness.



EXECUTIVE SUMMARY

Vision

Telehealth will be an integral part of ensuring all Albertans have equitable access to effective, efficient, and timely health services.

Mission

Connecting people with the health system and improving service by using technology to deliver health, education, and administrative activities at a distance.

Guiding Principles

- **Telehealth services will be centred on the needs of Albertans.**
- **Existing resources and knowledge will be leveraged.**
- **Telehealth initiatives will be interoperable.**
- **The Alberta telehealth network will be collaborative.**
- **Telehealth will integrate into the health system and support other initiatives.**

The Desired Future State of Telehealth in Alberta

The desired future state envisions something beyond 2009. Many of the activities are already happening, but the desired future state will see them entrenched, with a larger role and a greater impact on the health system.

Improved Access: More sectors will utilize telehealth technology, so the technology will be more widespread. Also, a greater number of services will be provided in rural communities and patient homes.

Enhanced Clinical Integration: More clinicians will recognize the utility of telehealth. It will be a routine part of health service delivery and used to help manage clinician workloads. Clinicians will offer all possible diagnostic work to patients locally. Policies will be in place to remove barriers such as remuneration, licensing, and privileging. There will be greater familiarity and comfort with telehealth equipment, and around-the-clock technical support will be available.

Support for Collaboration: Telehealth will play a large role in enabling a more holistic approach to patient needs. A greater variety of multidisciplinary and cross-sectoral services will be available such that one consult might replace two or more independent appointments. Such consults will result in collaboration with, for example, mental health agencies, children's services, and justice system contacts.

Enhanced Knowledge Base and Health Workforce: Telehealth will be incorporated into the education of health professionals and will also be more widely used to help deliver education and professional development.

Integration with Health System Operations: Supports will be in place to implement new telehealth services as they are needed. New telehealth services will be integrated more quickly into the health system. Telehealth costs, both human and technical, will be a regular part of health service budgets.

Technology Adoption and Integration: Telehealth will evolve with technology. Internet Protocol (IP) networks will increase videoconference quality; the Electronic Health Record (EHR) will make patient information readily accessible, even at a distance; wireless and web-based technologies will further expand the realm of possible services.

The Current State of Telehealth in Alberta

Alberta has one of the largest and best integrated telehealth networks in North America. On any given day, telehealth technology is used

- By specialists to consult with patients or other physicians;
- By clinicians to deliver a rehabilitation session, e.g. physical therapy, occupational therapy, or speech language therapy;
- To consult with home care clients, e.g. wound management, palliative care, or children's health;
- By administrators to hold a meeting; and
- To deliver education sessions either to members of the public or health sector professionals.

Telehealth in Alberta primarily uses videoconference technology, and there are more than 300 videoconferencing endpoints in Alberta today. Other telehealth technologies used include peripheral medical devices, web-based applications, videophones, and home telehealth units.

Telehealth has had a significant impact on access, quality, and capacity to deliver services.

- Telehealth provides new models of care such as facilitation of interdisciplinary consults based on doing what is best for the patient or client; for example, follow-up that prevents repeat hospitalizations.
- Telehealth addresses population needs, for instance home telehealth and creative workforce options to address the aging population or increase services to rural areas.
- Telehealth addresses geographical barriers by reducing travel and associated costs for clinical, education, and administrative events.
- Telehealth increases the capacity of clinicians to deliver clinical services and provides support for clinicians in rural areas or isolated environments.

Part of the current state of telehealth is an effort to integrate telehealth into routine service delivery. The governance model reflects this in that each of the key stakeholders participates in collaboration even when there is no reporting structure among them. The Provincial Telehealth Committee (PTC) provides strategic direction. Health regions and boards implement and deliver clinical services. Alberta Health and Wellness (AHW) supplies secretariat support to the PTC and directly invests in projects through seed funding by way of the Clinical Grant Fund. The Alberta Telehealth Coordinators' Committee serves as a network to link coordinators.

The current state of telehealth reflects years of hard work and dedication of telehealth champions at clinical and executive levels. Partnerships and alliances have been formed; they enable delivery of health and cross-sectoral services within and across regions and to First Nations communities. Focus has shifted from numbers of transactions toward integration with routine clinical care. Teleultrasound is an example of a service that has become integrated into routine service delivery. Such integration requires concerted effort and involves clinicians, technical, and support staff. Strategies in this plan reflect the need to continue to foster integration.

Aligning Telehealth with Health System Priorities

Telehealth is an important tool for improving access and quality in Alberta's health system. Telehealth supports priorities such as addressing rural health service needs and expanding access to mental health services and home and community care.

Telehealth aligns with Alberta Health and Wellness business plan goals:

- Improved access to health services
- Contemporary health workforce
- Improved health service outcomes

Pursuing the Vision: Four Areas of Strategic Opportunity

Telehealth is an evolving field with new opportunities always emerging. To accommodate change and provide flexibility, the 2006-2009 plan has a broad focus. Looking toward the envisioned future state, the 2006 – 2009 business plan sets out four areas of opportunity with corresponding goals and strategies.

1. Visionary Leadership

Goal for 2006-2009: An ever expanding group of stakeholders will champion telehealth initiatives at all levels of the network.

Strategies

1.1 Continue to collaborate with system stakeholders and support a coordinated leadership approach to telehealth initiatives.

1.2 Raise awareness of the value of telehealth with health service providers, local communities, the public, and government.

2. People-Centred Services

Goal for 2006-2009: An expanded range and utility of telehealth-delivered services and related partnerships will meet the needs of Albertans.

Strategies

2.1 Align telehealth priorities with the needs of Albertans.

2.2 Use telehealth to support the development, education, and service provision of inter-professional and multi-sectoral collaborative people-centred practice.

3. Integrated Programs and Change Management

Goal for 2006-2009: All telehealth projects will have a plan in place for integration into ongoing program delivery and will be supported by a change management strategy.

Strategies

3.1 Integrate telehealth into routine health service delivery.

3.2 Integrate telehealth use into training, education, and professional development programs.

3.3 Build a province-wide capacity to facilitate change management and faster adoption of telehealth.

4. Leveraging Technology Infrastructure

Goal in 2006-2009: Telehealth services will be delivered over Internet Protocol (IP) networks, enabling seamless cross-sector and intra-sector communication.

Strategies

4.1 Enable health regions and boards to migrate telehealth services to SuperNet.

4.2 Build a network of distance health service delivery based on reliable, easy-to-use, integrated technology that supports equitable access for patients and efficiency for clinicians.

ALBERTA TELEHEALTH VISION, MISSION AND PRINCIPLES

Vision

Telehealth will be an integral part of ensuring all Albertans have equitable access to effective, efficient, and timely health services.

Mission

Connecting people with the health system and improving service by using technology to deliver health, education, and administrative activities at a distance.

Guiding Principles

Telehealth services will be centred on the needs of Albertans.

Needs-based service puts people at the centre and ensures that telehealth initiatives are driven by client requirements.

Existing resources and knowledge will be leveraged.

Alberta's telehealth network will leverage existing resources to expand the current network and use the knowledge gained from earlier initiatives to replicate successes, eliminate obstacles, and create efficiencies.

Telehealth initiatives will be interoperable.

Alberta telehealth initiatives will be designed with technical, clinical, and operational interoperability as a critical measure of success. Interoperability is the ability to exchange and use information and includes best practices, knowledge transfer, process alignment, and technological connectivity.

The Alberta telehealth network will be collaborative.

Collaboration is the foundation for a responsive network of health service delivery systems using telehealth.

Telehealth will integrate into the health system and support other initiatives.

Telehealth will be integrated into routine service delivery and support the delivery of quality services. Telehealth development will align with other initiatives undertaken to meet the needs of Albertans and, where possible, take advantage of new and emerging technologies.

THE DESIRED FUTURE STATE OF TELEHEALTH IN ALBERTA

Where telehealth is an effective way to deliver a health service, it will be available and used.

In Alberta's health system of the future, telehealth will have evolved and expanded such that it will play a valuable role in increasing access, supporting collaboration, and ensuring that Alberta has the health workforce that it requires. Barriers such as jurisdictional issues and lack of knowledge of how to use telehealth will be overcome. New technologies and technology applications will be readily adopted and incorporated.

Improved Access

- Albertans will be able to access clinical services, supports for self-managed care, and educational programs from numerous professional disciplines using technology in their local community health care facilities, schools, and libraries.
- Rural residents will have the ability to access a range of services closer to home similar to those available in larger urban centres.
- Additional endpoints from other sectors will be added and new sectors will come on board.

Enhanced Clinical Integration

- Health providers and funding bodies will see the provision of specialized services by telehealth as a typical part of a clinician's practice just as they view outpatient and inpatient care as typical today.
- Telehealth will be a highly valued tool used by clinicians to help manage their workload.
- More clinicians will screen patients at a distance and ensure that all possible diagnostic work is done locally and reviewed before subjecting a patient to the time, expense, and possible discomfort of travel to receive services.
- Delivery of services across jurisdictions will not be impeded by remuneration, licensure, or privileging issues.
- Use of technology will not be impeded by lack of familiarity with equipment and around-the-clock technical support will be available.

Support for Collaboration

- Determinants of need for clinical services will be clearly articulated and clearly understood throughout the system.
- Cross-sectoral projects will become commonplace; health, education, and social services providers will use their extensive skill sets in a collaborative fashion to deliver services at a distance.

For example:

- Health providers and Children's Services will collectively conduct case conferences to support children with complex disabilities living in their home communities.
- Youth mental health agencies, the Alberta Alcohol and Drug Abuse Commission, and health regions will collaborate with rural school boards to deliver lifestyle and health education courses to junior and senior high students in northern Alberta.
- Telehealth will provide greater community supports for those transitioning from services for children and adolescents to independent adulthood.
- Telehealth will provide increased means to support people with mental health issues who are in the justice system.

Enhanced Knowledge Base and Health Workforce

- Telehealth will become part of the field practicum experience for students in the health professions as they conduct both their urban and rural practicums.
- Ongoing educational opportunities will be provided to students and practitioners in rural communities both in the health and social services realms.
- Telehealth will increasingly be used for enhancing the ability of clinicians to increase their knowledge base and better meet patient needs.
- Telehealth will support strong communities of practice and reduce time and distance barriers.

Integration with Health System Operations

- The system will support implementation of new telehealth applications as the clinical need arises.
- New projects and new telehealth sites will be quickly integrated into the network; telehealth staff working in the network will have the required resources, organizational skills, and knowledge of best practices and service delivery models.
- Telehealth infrastructure will be incorporated into new facilities and renovations of existing infrastructure, and operating costs will be part of the ongoing budgets.
- Human resource costs of telehealth programs will be treated in the same way as other staff resources for program delivery.

Technology Adoption and Integration

- Telehealth applications will migrate to high speed Internet Protocol (IP) networks such as Alberta SuperNet. This will facilitate the expansion of existing services and enable new clinical telehealth applications such as surgery.
- Telehealth technology and the electronic health record (EHR) will be interoperable and patient information will be readily accessible to care providers regardless of physical location.
- There will be more web-based and wireless solutions, and the focus will shift from videoconferencing to the next generation of technologies. These technologies will be used in combination with advancements in network capabilities, notably wireless applications. This will result in increased capabilities for providing care in people's homes or residences and more telehealth consults from physicians' offices.
- There will be improved technical capabilities and the use of monitoring devices and other remote applications will be more common.

Alberta Telehealth's Beginnings

Alberta has one of the largest and best integrated telehealth networks in North America. Such progress is due in large part to the generous contribution in 1998 by an anonymous donor and additional investment from Alberta Health and Wellness. This funding was instrumental in establishing telehealth endpoints in each health region by defraying some of the costs of implementing new technology and services.

Alberta has also been fortunate to have people with a vision of telehealth's potential for the health system. They have been instrumental in the development of Alberta's network. Implementing new telehealth services required additional technology as well as awareness, training, and commitment of resources. Ensuring those elements were in place started with just a handful of individuals committed to telehealth development.

An Overview of Alberta's Telehealth Network

The telehealth network in Alberta is unique in that it operates on a province-wide basis over a large geographical area and currently has more than 300 endpoints. Organized by the province's health regions and boards, clinical services are offered in approximately 30 program areas. Endpoints are located primarily within health region and board facilities, and approximately two thirds of all hospitals in Alberta now have telehealth videoconference sites. Other endpoints are located in community clinics, nursing stations, and administrative offices. As collaboration and cross-sector partnerships expand, more endpoints are being deployed in Alberta Children's Services facilities and schools to meet demands for community-based care.

Another feature of Alberta's telehealth network is the VC Scheduler, a province-wide web-based system used to schedule telehealth sessions and report session statistics. Within Alberta, endpoints belonging to the health sector, other government departments, and other agencies are available for booking through the VC Scheduler. The Northwest Territories, Nunavut, and Saskatchewan also use the VC Scheduler; this brings efficiencies to scheduling interjurisdictional events. The VC Scheduler team is working directly with telehealth programs in other provinces to pilot the system for further expansion to other jurisdictions. The scheduling system supports and encourages collaboration among other jurisdictions and sectors and has contributed to the growing use of telehealth. As shown by the data, telehealth usage has increased significantly. (Figure One)

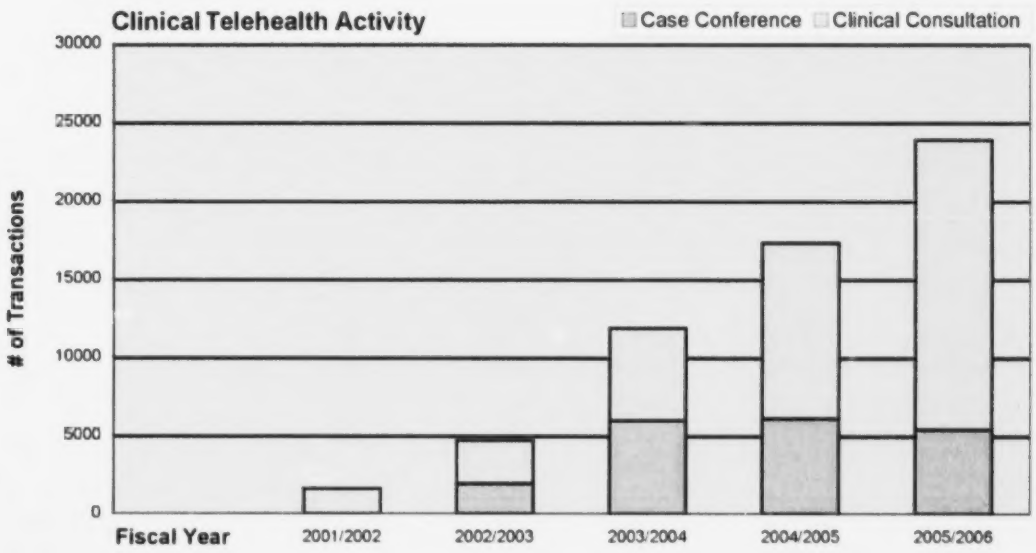


FIGURE ONE

UTILIZATION OF TELEHEALTH FOR ALL REAL-TIME VIDEOCONFERENCE CLINICAL APPLICATIONS. (HOME TELEHEALTH CONSULTS ARE NOT INCLUDED.) CLINICAL CONSULTATION IS TELEHEALTH ACTIVITY THAT DIRECTLY INVOLVES A CLIENT AND A CLINICIAN. CASE CONFERENCE IS CLINICIANS DISCUSSING A SPECIFIC PATIENT'S CLINICAL CARE.

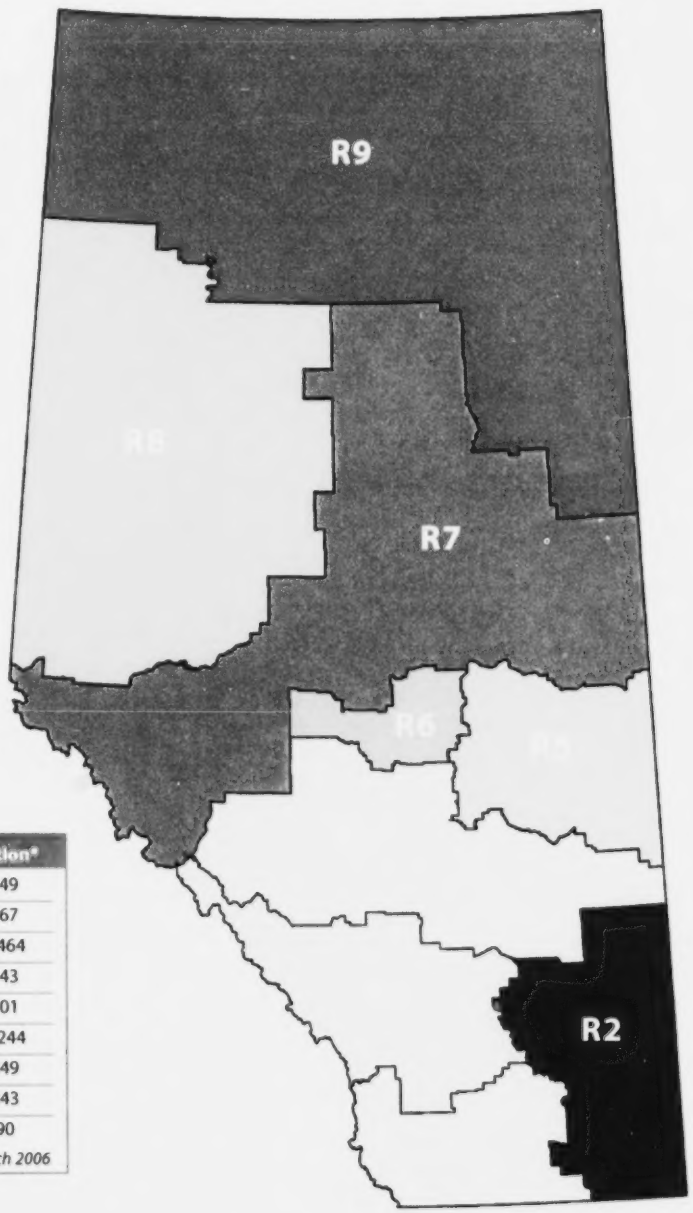
Alberta's Health System

Alberta is divided into nine health regions: two urban regions centred on the major city centers of Edmonton and Calgary and seven rural regions which are less densely populated but encompass large geographical areas.

Health regions are mandated by the *Regional Health Authorities Act* to promote health, respond to regional health needs, and report on performance. Hospitals, continuing care facilities, community health services, and public health programs in Alberta fall within health region responsibility. As such, they assess regional health needs, determine priorities, and allocate resources accordingly. Health regions work with communities to deliver health services to local residents. Differing geographical locations as well as variances in population and resource availability translate into different needs, priorities, and challenges for individual regions.

In addition to the nine health regions, there are three provincial health authorities: The Alberta Cancer Board, The Mental Health Board, and the Health Quality Council of Alberta. As per the *Cancer Programs Act*, the Alberta Cancer Board coordinates the planning and delivery of provincial cancer initiatives in cooperation with the health regions. The Alberta Mental Health Board governs province-wide services and programs, promotes mental health, and advocates for Albertans. Designated a provincial health authority in 2006, the Health Quality Council (HQC) provides Albertans with an independent assessment of the quality, safety, and performance of the province's health system. HQC works in cooperation with other regions and boards to improve health service quality and patient safety. HQC developed the Alberta Quality Matrix for Health and the Dimensions of Quality, indicators which are used in evaluating telehealth services.

FIGURE TWO: CLINICAL PROGRAM AREA



Health Region	Area (sq km)	Population*
Chinook	25,944	155,549
Palliser	39,608	101,667
Calgary	39,255	1,196,464
David Thompson	61,288	298,143
East Central	33,669	110,701
Capital	11,831	1,018,244
Aspen	136,992	176,849
Peace	123,180	137,843
Northern Lights	188,456	74,590

*Current at March 2006

CLINICAL PROGRAM AREAS

CLINICAL DISCIPLINE	Chinook Regional Health Authority R1	Palliser Health Region R2	Calgary Health Region R3	David Thompson Health Authority R4	Aspen Regional Health Authority R7	Northern Lights Health Region R9	Alberta Cancer Board ACB	Alberta Mental Health Board AMHB
Arthritis Care		■						
Discharge Planning		■			■	■	■	
Cardiac Care		■				■		
Cancer Care		■				■	■	
Case Conferences					■		■	
Chronic Disease Management		■				■		
Counseling Services		■				■		
Dermatology								
Diabetes Care		■				■		
Geriatric Care		■			■	■		
Genetics		■				■		
Homecare						■		
Immunology								
Infectious Diseases								
Internal Medicine						■		
Mental Health		■			■	■	■	■
Neo-Natal Care		■						
Nephrology								
Neurology		■			■	■		
Obstetrics and Gynecology					■			
Orthopedics						■		
Ophthalmology								
Pediatrics		■			■	■	■	
Pulmonary					■			
Rehabilitation		■			■	■	■	
Respiratory								
Renal Care					■	■		
Surgery								
Stroke Care		■				■		
Trauma Care								
Urology						■		
Women's Health								
Wound Care		■				■		

Partnerships and Alliances

The province-wide nature of Alberta's telehealth network has encouraged the growth of cross-sectoral and cross-jurisdictional alliances and partnerships. Chief among these are the partnerships among health regions which have been established to facilitate delivery of health services across regions. As of January 2006, 83 telehealth programs provided service to areas outside their health region and 18 telehealth programs provided service to areas outside the province of Alberta on a regular basis.

Other stakeholder partnerships are varied and numerous and include agreements with technology providers, other jurisdictions, Government of Alberta departments, and universities. One example is the partnership between several health regions and Alberta Children's Services to enable sharing of technology and supporting services. Alberta Health and Wellness (AHW) also has partnered with Health Canada First Nations and Inuit Health Branch Alberta Region (FNIHB) to invest in extending both existing and planned telehealth services delivered by the health regions and boards to First Nations communities.

Alberta participates in cross-provincial initiatives such as the Western Health Information Collaborative (WHIC) change management and scheduling projects and the pediatric cardiac initiative.

This success in developing partnerships and alliances is remarkable considering the issues that must be worked through; issues include technological compatibility, policies and procedures, and questions around who will cover the costs for a service and who will be accountable for delivering a service. Often there are governance issues to address, and partnerships and collaborations must respect jurisdictional and health region and board governance.

Western Health Information Collaborative's (WHIC) Telehealth Change Management Project

The WHIC Telehealth Change Management Project is a pan-Canadian telehealth project that Canada Health Infoway has invested in. The project is designed to bring together telehealth representatives from jurisdictions across Canada to collaborate and achieve a common understanding of change management with respect to telehealth. The project seeks to develop resources to assist jurisdictions with change management. Another component is a dissemination strategy to make the resources widely available in participating jurisdictions.

Western Canadian Children's Heart Network

The Western Canadian Children's Heart Network (WCCHN) was created in 2000 to better link expertise between five pediatric cardiac care centres. Members of the network work with children's heart care providers to share knowledge, research, and work practices to improve care for children. The five equal partners involved in the Network are B.C. Children's Hospital (Vancouver); Stollery Children's Hospital (Edmonton); Alberta Children's Hospital (Calgary); Royal University Hospital (Saskatoon); and Winnipeg Children's Hospital.

Medical experts in centres across the four western provinces meet regularly using videoconferencing and/or teleconferencing, or in person to discuss pediatric heart patient cases. It brings together top cardiologists, surgeons, hematologists and other specialists involved in caring for children with heart problems.

In the highly-specialized field of pediatric cardiology, sharing information is crucial, says Dr. John Dyck, Director of Pediatric Cardiac Sciences at Capital Health's Stollery Children's Hospital in Edmonton. "Some congenital heart defects may be so complicated or unusual that a cardiologist may have seen a particular defect only once or twice before. By sharing data and experience, we can acquire an essential body of skill and knowledge."

(From Capital Health and Western Canadian Children's Heart Network)

Governance

Strategic direction is provided to Alberta's telehealth initiative by the Provincial Telehealth Committee (PTC). The PTC guides further expansion of clinical telehealth services. Its membership is composed of senior representatives from health regions and boards, Alberta Health and Wellness, physicians, and the Council of CEOs of health regions and boards as well as representation from the Alberta Telehealth Coordinators' Committee and the public. The PTC reports primarily to the Council of CEOs of health regions and boards and also to the EHR Governance Committee.

The Alberta Telehealth Coordinators' Committee (ATCC) provides a forum for telehealth coordinators to meet and discuss operational issues and serves an advisory role to the PTC. Membership of the ATCC includes a representative from each health region and board in the province, the telehealth coordinator from Health Canada First Nations and Inuit Health Branch Alberta Region, and the Provincial Telehealth Coordinator and Clinical Telehealth Manager from Alberta Health and Wellness. There are provisions in the ATCC Terms of Reference, for telehealth representatives from other sectors to join as well. This group supports coordination and maintenance of interoperability such as a common bridging service contract and purchasing across different network types (SW56, ISDN, and SuperNet).

The Alberta Health and Wellness Telehealth Branch provides policy direction to Alberta Health and Wellness and centralized support services to the provincial telehealth network, including managing funding programs and facilitating provincial efforts around technology standards, evaluation, bridging, and scheduling. The Alberta Health and Wellness Telehealth Branch also functions as the Provincial Telehealth Committee's secretariat, providing administrative and organizational support.

Clinical Telehealth Services

The 2003-2006 Telehealth Strategic Business Plan focused on expanding the range of clinical services using telehealth. This led to the development of the Clinical Grant Fund which provided seed funding for clinical projects to offset the costs of implementing technology and adding services. To date, the fund has invested in approximately 50 clinical programs which are making health services more accessible, proving the viability and quality of clinical telehealth services, and helping to build the provincial network.

A diverse range of clinical services is delivered via Telehealth, including:

- Specialist consults, both diagnostic and follow-up;
- Rehabilitation services such as physical therapy, occupational therapy, and speech language therapy;
- Screening services and teleophthalmology; and
- Preventative services such as patient education sessions.

A telehealth session might involve videoconferencing between a specialist in an urban centre and a patient in a rural health center or a team of clinicians in one location and specialists in other parts of the province, videophone calls between health service providers and clients at home, or web-based services accessible around the world.

Telehealth can be used to confirm whether an in-person consult is required. Where it is not required, telehealth sessions eliminate the need for travel; in other instances telehealth minimizes the number of trips a rural resident must make to an urban center. Travel for health service providers also decreases when home care workers can consult with patients via a home telehealth unit.

Telehealth is making new models of delivering care possible. For example, the Virtual Lung Clinic allows a patient to consult with multiple providers in one session rather than, as is traditionally done, attending a series of sessions over several months. One session provides the range of specialist expertise required to determine a diagnosis and identify the most appropriate next steps for a patient's care. The patient is spared multiple trips and more timely treatment is possible. In many cases, the number of diagnostic tests required is reduced because time does not elapse between specialist visits.

Another way that telehealth is making new models of delivering care possible is by providing solutions to help address the needs of an aging population. For instance, telehealth enables more frequent monitoring via home telehealth applications and creative workforce options.

Telehealth in Alberta is part of a broadly based and inclusive health information technology strategy. There are a number of initiatives underway as part of that strategy, including the Electronic Health Record (EHR) which is developing a province-wide EHR network; Diagnostic Imaging (DI); Picture Archiving and Communications System (PACS) which uses an image server to exchange X-rays, CT scans and other medical images over a network; and HealthLink. Linkages and relationships are in place to ensure that telehealth development is coordinated with these initiatives and is an integral piece of this enterprise.

Education and Administrative Uses

Education and administrative uses for telehealth were established early on and with relative ease in comparison with clinical services. In particular, telehealth plays an important role in building capacity for local providers through education sessions, mentoring, and increased contact with specialists.

The Electronic Health Record in Alberta

Alberta is leading the country in the development of a single province-wide electronic health record. Alberta Netcare Electronic Health Record (EHR) encompasses all the projects, products, programs and services that make Alberta's EHR possible.

An Electronic Health Record is a secure lifetime record of an individual's key health information available to authorized health professionals electronically. It is not a patient's full medical record.

There are currently more than 12,500 health professionals registered to use the Alberta Netcare Portal, and that number continues to grow every day. Each new user brings us closer to realizing the vision set out in 2005 - that every Albertan would have an electronic health record by January 2008.

What are the benefits of Alberta Netcare?

Alberta Netcare includes information such as prescription, allergy, and lab test results from the health system, not just a patient's own health provider. This information will be received by doctors and other health providers faster than before. It will help them better assess what tests are required, give patients a diagnosis based on information from more of the health system, and better coordinate care with other providers.

http://www.albertanetcare.ca (November 2006)

ASSESSING TELEHEALTH'S IMPACT ON ALBERTA'S HEALTH SYSTEM

Telehealth has had a significant impact on access, provider capacity to deliver services, and improving the quality of service in Alberta. While not yet used everywhere in Alberta, many telehealth projects have been incorporated into routine patient care. Patients throughout the province have benefited from the convenience, efficiency, and effectiveness of telehealth services and are increasingly seeking to receive clinical services through telehealth.

> I think the telehealth seating clinics are a great way to meet clients' needs in the communities where they live. Without this, clients would face a long trip into Calgary, which for some clients and caregivers would be impossible. The telehealth seating clinic provides a very valuable service.
>
> *- clinician involved with the Wheelchair Seating Clinical Telehealth Project*

In Alberta today, telehealth technology consists primarily of videoconference applications but also includes peripheral medical devices, web-based applications, videophones, and home telehealth units.

Telehealth is inherently multidisciplinary, bringing together different disciplines and combining health services with technology not traditionally associated with health services. This has enormous potential for telehealth to impact health care, but it also presents challenges for introducing change and integrating new technology and procedures. In response, a supportive network of people familiar with telehealth has developed in Alberta. These people have a variety of backgrounds ranging from primarily clinical to primarily technical. Such varied perspectives create opportunities to identify additional technology and clinical services to which the technology might be applied.

> It was great! The people I need were there. I have so much happening already that another day out of my life makes a big difference.
>
> *- parent of a child involved with the Enhancing Paediatric Care Across Southern Alberta Project*

Telehealth addresses geographical barriers and increases access to services. For education and administrative purposes, telehealth reduces travel and facilitates attendance at learning sessions and meetings. Clinical telehealth applications bring services closer to patients, helping avoid travel issues such as cost (time away from work, travel, accommodation, costs for family members to accompany the patient, child care), weather, access to transportation, and mobility limited by physical conditions. Telehealth is a way to increase the services available in rural areas and help ease the impact of the limited availability of health service providers.

> The tele-homecare project in Northern Lights has greatly assisted home care visits. In one case, a telehealth system was implemented, eliminating the six hours travel time required for the nurse to reach the client. Another positive result was that the client's whole family became more involved in her treatment program.

Telehealth also provides ways to improve quality throughout the continuum of care. For instance, the speech language pathology team participating in the Rehabilitation Care in Northern and Central Alberta Project was able to use telehealth to see how school aides interacted with a person within the school setting in a remote location. Based on their observations, these hospital-based clinicians provided direct feedback to improve the aides' practice.

> "Interdisciplinary telehealth sessions offered a more holistic treatment consultation for the patient as videoconferencing permitted real time communication with the patient's entire treatment team."
>
> *Clinician feedback.*

One of the greatest contributions telehealth makes to the Alberta health system is increasing capacity for delivering care in local communities. This results from telehealth-enabled specialist consults, as well as the increased clinical expertise gained by local clinicians who participate in sessions with specialists. These interactions help local clinicians develop new skills and keep abreast of the latest advances in medicine. In other cases, telehealth facilitates followup which helps prevent repeat hospitalizations.

Telemental health has increased capacity in rural locations. For example, 85 percent of participating rural physicians reported an improved ability to manage patients locally.

Opportunities are being pursued to expand and extend current clinical telehealth services and increase the impact of telehealth on Alberta's health system. For example, the Clinical Telehealth Innovation Program (CTIP) builds on existing services by offering services in additional communities or augmenting the types of services already delivered. One of the services extended by CTIP is the Community Discharge Planning and Follow Up project. It will extend services to clients in rural areas by providing mental health services via videophone to the clients' homes including, in one instance, a group home. The project will also install additional videoconference technology for consults with patients in rural mental health clinics.

Telehealth is also used to provide formal education opportunities. Calgary Health Region and Capital Health currently deliver over 30 different sets of clinical rounds. Telehealth is used to deliver continuing medical education to health professionals and performance development programs to health region and board staff (e.g. a supervisor leadership workshop).

Telehealth sessions for administration have allowed health regions and boards to save money by holding meetings and conducting administrative activities such as interviews through videoconferencing equipment. Telehealth also permits increased participation of individuals from rural areas in inter-regional meetings thus enhancing participation in province-wide discussions.

The impact of telehealth reaches beyond the technological network. It has, in essence, created a new skill set in the workforce including telehealth coordinators, technical staff, administrators, and program managers.

Telehealth can:

- Help patients access care in their own communities
- Bring health services and information to people who for reasons of geographical distance or time or issues of mobility would otherwise not receive the service
- Save time and expense, directly (travel, accommodations) and indirectly (time off work, daycare), for both patients and accompanying family members and caregivers
- Facilitate collaboration for health service providers; videoconferencing and digital images provide visuals which telephone consults cannot. Videoconferencing has the added benefit of occurring in real time
- Enable more multidisciplinary consultation, thus promoting consistency and continuity of care for patients
- Build capacity that leads to additional independence, e.g. for clinicians in rural sites who, via telehealth, have increased contact with specialists

TECHNOLOGY AND TELEHEALTH

Advances in technological capacity led to the genesis of telehealth. As technology advances further, the possibilities for adapting technology to resolve issues in the health system grow and drive change in telehealth.

Telehealth Integration into Day to Day Operations

Teleultrasound is an example of the evolution of telehealth technology from leading edge to the new norm in the health context. Technology has been integrated with these services to the point where teleultrasound sites have migrated away from standalone platforms. They are now largely considered as integrated into routine service delivery.

Telehealth Integration with the Electronic Health Record

As the telehealth network continues to grow and evolve, care must be taken to ensure compatibility with Alberta's Electronic Health Record (EHR) initiative. It is important to ensure security and technological compatibility between the telehealth system and the EHR so that patient information can safely flow both ways. Clinicians delivering clinical services via telehealth need to access patient data via the EHR, and they need to be able to add patient information from the telehealth session. Having access to all appropriate information will help ensure that patients receive the best possible care and minimize repeat visits.

Telehealth Integration with an Internet Protocol (IP) Environment

An estimated 90 per cent of the endpoints in the health sector currently use ISDN and SW56 (digital phone lines) as the means of connecting to other sites. This accounts for approximately 75 per cent of telehealth service. The digital telephone network has been a reliable, secure, and effective way of delivering health services across Alberta. Although expensive at times, it has provided a high level of interoperability to all on the network.

A second method of connecting sites is by using Internet Protocol networks which is the same infrastructure computers use. Whereas regular telephone lines are owned and operated by telephone company providers, IP infrastructure is often owned by the organization, so once in place ongoing costs are often much less.

Currently about 25 per cent of telehealth services connect via Internet Protocol (IP) networks. This number is growing with the arrival of Alberta SuperNet and the planned migration to a fully IP environment. This transition will be a dramatic evolution of the telehealth network.

Alberta SuperNet

An initiative of the Alberta Government, Alberta SuperNet provides a secure high speed provincial highway capable of transferring IP data, voice and video communication traffic through a combination of fibre optic and wireless communications. When fully operational, SuperNet will establish a high-capacity telecommunication network connecting approximately 4,300 sites. This includes all publicly funded schools, hospitals, ministerial offices, and libraries in 429 communities in Alberta.

ALIGNING TELEHEALTH WITH HEALTH SYSTEM PRIORITIES

The Government of Alberta is committed to maintaining a strong public health care system – one that is accessible, sustainable, and focused on providing the best care possible. This commitment means looking ahead and preparing today to meet the challenges of the future.

In coming years, Alberta's health care system will face increasing pressure from an aging population, new medical advances and the rising cost of prescription drugs. Without making changes, Alberta's public health care system will not be sustainable.

Health care renewal is needed to ensure that all Albertans continue to have access to the excellent public health care system we value.

Alberta Health and Wellness, Health Policy Framework, August 2006

Telehealth is an important tool for improving access and quality in Alberta's health system. As work continues in the health renewal process, telehealth needs to ensure that it evolves in alignment with the changes that will occur within the system. These system changes include initiatives to strengthen health services in rural and remote areas of Alberta, increase the number of primary care networks serving Albertans, and encourage the use of multidisciplinary and multi-sectoral teams.

Access to health services is a critical issue in rural communities, and the provincial government's Rural Development Strategy identifies health care as one of the pillars that must be addressed to preserve and sustain rural communities. Expansion of telehealth services is one of the identified areas of focus in addressing rural health care needs. Telehealth will support priority areas, including expanded access to mental health services and home and community care.

Telehealth can also support primary care networks. It can help primary care teams access services from elsewhere in the province to serve the needs of their patients. And, telehealth can assist in delivering services to patients in spite of geographic distance.

Telehealth aligns with AHW business plan goals:

- Improved access to health services:
  - Telehealth enables care closer to home which is particularly important for individuals with limited means to travel.
  - Telehealth is frequently used to enhance continuity of care in Alberta.
- Contemporary health workforce:
  - Telehealth service delivery enables the use of multidisciplinary teams even when all members are not at the same location, and it supports capacity building in rural communities through distance education and interaction with other health service providers.
- Improved health service outcomes:
  - Telehealth is used to help Albertans with chronic health conditions.
  - Telehealth improves quality along the continuum of care.

People-centred focus on Albertans aligns with the overall vision of the Alberta health system: "Healthy and well Albertans."

PURSUING THE VISION:
FOUR AREAS OF STRATEGIC OPPORTUNITY

Alberta was one of the first jurisdictions to pursue the benefits of a coordinated strategy for incorporating telehealth throughout the health system. Such work has led to many successes: people are getting better service in many areas, information is more readily available and has thus brought about improvements in quality care, and overall the notion that quality services can be delivered at a distance has been accepted.

While telehealth is now an important part of service delivery in Alberta, more needs to be done before the maximum impact of telehealth will be realized. To this end, the 2006 – 2009 Business Plan sets out four areas of opportunity with corresponding goals and strategies. The four areas are:

1. Visionary leadership,

2. People-centred services,

3. Integrated programs and change management, and

4. Leveraging technology infrastructure.

Although the four areas of opportunity are addressed in turn, it is important to recognize that there is some overlap of strategic activities and actions across the four areas. For example, communication and change management are themes common to several areas of opportunity and could have been included in more than one section.

1. Visionary Leadership

Looking to the future, visionary leadership will require telehealth leaders to develop a common vision for telehealth in Alberta and seek buy-in with clinical and administrative leaders. In order to achieve this, advocates must generate greater awareness of telehealth's success and the potential for telehealth as a delivery option.

Current users need to share the success that they have had through vignettes, evaluations, and economic analyses. Other modes of communication which will contribute to information sharing include the provincial telehealth website and regional publications.

Some service delivery and geographic areas still need telehealth champions to establish telehealth services. Future champions must be identified and given the resources needed to encourage the delivery of services via telehealth. New partnerships should be established to implement and extend the delivery of clinical services and overcome organizational and financial hurdles. The governance structure, including representation on committees, must evolve as the nature of telehealth and its goals change.

Lessons learned must be shared within the province, within Canada (including Canada Health Infoway), and internationally. This will encourage the development of new and refined approaches for using and integrating leading telehealth applications for clinical, administrative, and educational purposes.

Leadership Goal for 2006-2009

An ever expanding group of stakeholders will champion telehealth initiatives at all levels of the network.

Outcomes

- Health regions and boards, Alberta Health and Wellness, and other key stakeholders will share a common vision for telehealth and work collaboratively to achieve this vision.
- As a decentralized yet cohesive system, the Alberta telehealth network will be more robust, driven by common goals, and understood by stakeholders, clinicians, health leaders, and the public.

Strategies

1.1 Continue to collaborate with system stakeholders and support a coordinated leadership approach to telehealth initiatives.

Strategic Activities:

- Seek input and assess needs of stakeholders.
- Continually revise and refine the desired future state.
- Articulate the roles and responsibilities of stakeholders.
- Assess and capitalize on external opportunities available to enhance telehealth in Alberta.

Actions:

- Hold an annual meeting with system stakeholders including health system leaders from regions, boards, colleges, the Provincial Telehealth Committee, government, and others in a think tank setting to discuss the future of telehealth.
- Hold an annual meeting with the Provincial Telehealth Committee and the Alberta Telehealth Coordinators' Committee.

Lead	Partners
Provincial Telehealth Committee	Alberta Health and Wellness Health Regions and Boards

1.2 Raise awareness of the value of telehealth with health service providers, local communities, the public, and government.

Strategic Activities:

- Develop and implement a pro-active communications strategy in order to share, inform, and educate the various audiences on telehealth, including its availability; how and when to access it; its benefits; and situations where a telehealth encounter would be appropriate. Include a strategy for communication with national and international audiences.

Actions:

- Recruit and/or seek alliances with communications expertise already available in government, health regions and boards, media, voluntary organizations, and the private sector.
- Establish relationships with the media and voluntary health agencies locally and provincially to share "good" stories.
- Provide stakeholders with communications materials and processes that can be readily adapted to help promote and publicize telehealth initiatives.

Lead	Partners
Provincial Telehealth Committee	Alberta Health and Wellness Health Regions and Boards

2. People-Centred Services

In a large complex system, the interests of individuals can become secondary to the pressures of the system. In fact, the leading priority of the Health Policy Framework (Alberta Health and Wellness, August 2006) is putting the health of Albertans first. One of the ways to do this is by organizing health services around the needs of patients and clients rather than the needs of the health system, for administrative ease, or because they have always been delivered that way.

Telehealth can play an important role in furthering a people-centred health system in Alberta. It can improve access to clinical and specialized services – bringing them to Albertans rather than moving people to the service. It can play an important role in improving access and driving down wait times. And, telehealth can target specialized service delivery, including urgent and emergent services, to those with more limited access, notably Albertans living in rural health regions. An example is access to stroke care.

The delivery of tissue plasminogen activator (t-PA) treatment for some stroke cases can be facilitated using telehealth to connect local care providers with stroke neurologists in other parts of the province so they can consult and determine the best treatment for a stroke patient in emergency.

Developing people-centered telehealth services requires making Albertans aware of the wide ranges of health services that are or could be delivered by telehealth. It also requires more new approaches and teams, perhaps bringing service providers together to create more interdisciplinary approaches or cross-sectoral collaboration with departments such as Children's Services, Seniors and Community Supports, and Education

People-Centred Services Goal for 2006-2009

An expanded range and utility of telehealth-delivered services and related partnerships will meet the needs of Albertans.

Outcomes

- People requiring multiple services will have access to telehealth delivery as a means of ensuring efficient and timely services through a coordinated point of entry.
- Telehealth will support best practices, improve access, and improve quality of care through coordination and integration of required services.

Strategies

2.1 Align telehealth priorities with the needs of Albertans.

Strategic Activities:

- Align telehealth with priorities identified in provincial and regional health plans.
- Focus on communities and populations in need, vulnerable, and/or at risk, especially rural and aboriginal communities. Create opportunities and mechanisms to help these communities identify and articulate their specific needs through culturally preferred processes such as participatory action, communities of practice, focus groups, or round tables.
- Collaborate with other key access-improvement initiatives with particular focus on province-wide priorities such as the Alberta Hip and Knee Replacement Project and the development of innovative models of care for health services such as coronary artery bypass graft, prostate cancer, and children's mental health.
- Connect to groups caring for seniors to identify how telehealth can support home and community care for this population.
- Identify clinical situations where timely and efficient access through telehealth will improve quality of care and health outcomes, such as stroke care, or other urgent and emergency situations. Support the development of telehealth delivery in these areas.
- Encourage primary care networks and physicians to establish telehealth endpoints in their clinics to facilitate care.

Actions:

- Develop information systems, e.g. a scheduling system and tools that identify and incorporate multi-professional and multi-sectoral service needs; develop mechanisms and methodologies that promote coordinated care.
- Work with Health Canada First Nations and Inuit Health Branch and First Nations Treaty area representatives to support their Health Information Management Committee in developing a First Nations Telehealth Business Plan.
- Work to strengthen, and in some instances, establish relationships and agreements with:
  - Other complementary strategic initiatives such as Alberta's Rural Development Strategy, Electronic Health Record, HealthLink, Rural Physician Action Plan, home care, Critical Care Line, Rapid Access Line, Physician Office System Program, etc;
  - Groups such as Alberta Alcohol and Drug Abuse Commission (AADAC), Health Canada First Nations and Inuit Health Branch, Primary Care Networks, Southern Alberta Child and Youth Network (SACHYN), Central and Northern Network for Child Health; and
  - Other jurisdictions and government departments such as Children's Services, Seniors and Community Supports, Justice, Education, and school boards.

Lead	Partners
Provincial Telehealth Committee	Alberta Children's Services
Health Regions and Boards	Alberta Seniors and Community Supports
Clinical Telehealth Programs Alberta Health and Wellness	Alberta Education
	Health Canada First Nations and Inuit Health Branch
	Association of Rural Municipalities
	Social Services Agencies

2.2 Use telehealth to support the development, education, and service provision of inter-professional and multi-sectoral collaborative people-centred practice.

Strategic Activities:

- Identify patient and client needs and situations that are best addressed by multidisciplinary or multi-sector teams.
- Meet with groups already involved in inter-professional collaborative people-centred practice to identify their telehealth needs in education and service delivery and articulate barriers and challenges to collaborative care that telehealth may solve.

Actions:

- Provide stakeholders with an opportunity to explore how telehealth can support inter-professional collaborative practices and people-centred care at the 2007 Clinical Telehealth Forum.

Lead	Partners
Provincial Telehealth Committee	Alberta Health and Wellness
Health Regions and Boards	Alberta Advanced Education and Technology
	Professional Faculties in Universities and Colleges
	Professional Associations
	Health Profession Regulatory Agencies

3. Integrated Programs and Change Management

Integrating telehealth into ongoing service delivery means that delivery of services via telehealth will be as routine as traditional service delivery and that telehealth costs will be encompassed in operational budgets. It means that telehealth will be incorporated into the education of health professionals and will be used to help deliver education and professional development as well.

Project evaluation is critical to ensure that telehealth is integrated as effectively as possible. An evaluation framework has been completed. Next steps include standardization of data collection across all health regions, distribution of the framework, and training for health region staff to maximize the utility of future evaluation data.

Achieving integration requires shifts in the behavior and attitudes of staff, patients, and providers around scheduling appointments, delivering services, communications, and time management. Staff and providers must also learn to operate new technology and feel comfortable using the technology for clinical service delivery. These shifts in behavior and attitudes and the subsequent integration of telehealth will be more successful if they are supported by a consistent change management strategy. The strategy needs to include change management supports: ways to support behavioral changes, training needs, program developments and evolution by sharing best practices and information.

It will require addressing issues around physician compensation, licensure, and jurisdiction. Delivering services across jurisdictions is often impeded by licensure and policy issues such as where a service is deemed to be delivered - from the send site or at the receive site. Such issues are compounded by the need to ensure consent is obtained, determining the applicable fee codes, and ensuring privacy is protected in an environment where laws differ across jurisdictions. Telehealth has been more fully integrated in some areas than others. The reasons for this need to be better understood and strategies put in place to overcome barriers to its full adoption.

Program Integration and Change Management Goal for 2006-2009

All telehealth projects will have a plan in place for integration into ongoing program delivery and will be supported by a change management strategy.

Outcome

- Telehealth will be a necessary and integral component of health service delivery and fully integrated into clinical programs.
- Telehealth will be incorporated into strategic program planning and funding models.

Strategies

3.1 Integrate telehealth into routine health service delivery.

Strategic Activities:

- Identify and address system-wide, administrative, professional, individual provider, and patient issues that remain as barriers to complete integration.
- Develop an economic template(s) that will assist regions and boards in evaluating whether to provide a service via telehealth.

Actions:

- Building on previous work, commission a study on workflows and work plans which focuses on barriers that inhibit integration and how to overcome such barriers.
- Complete an ongoing initiative addressing clinical program economic framework.
- Work with health regions and boards to ensure they have the information required to develop sustainable budgets and projections and incorporate telehealth into business plans.
- Continue to provide seed and transitional funding, e.g. Clinical Grant Fund, to offset the increased resources required when implementing new services.

Lead	Partners
Provincial Telehealth Committee Alberta Health and Wellness	Health Regions and Boards Professional Associations/Colleges Academics

3.2 Integrate telehealth use into training, education, and professional development programs.

Strategic Activities:

- Create partnerships and alliances with experts to develop technical, clinical, and administrative telehealth expertise in Alberta.
- Pursue opportunities for telehealth to support the strategic goals of the Health Workforce Action Plan: 2007-'08 to 2013-'14 and jointly develop a plan that addresses capacity building and training requirements.

Actions:

- Continue the dialogue with organizations (universities, colleges, institutes, and professional schools) involved in undergraduate, graduate, and continuing education to develop targeted courses and programs in telehealth at all levels including technical, clinical, educational, research, administration, management, and health policy.
- Convene those involved in health professional and health informatics education to discuss and encourage the incorporation of telehealth experiences in practicum and clinical training sessions in urban and rural settings.
- In conjunction with educational institutions, professional associations and colleges, licensing and regulatory bodies and accreditation agencies, address and develop educational standards and requirements for telehealth content and experience required by health professionals in the 21st century.

Lead	Partners
Provincial Telehealth Committee	Universities, Colleges and Institutes
Alberta Health and Wellness	Health Regions and Boards
	Alberta Education
	Alberta Advanced Education and Technology

3.3 Build a province-wide capacity to facilitate change management and faster adoption of telehealth.

Strategic Activities:

- Develop change management initiatives and resources at all levels to help build capacity and maximize telehealth service delivery.
- Review knowledge dissemination and knowledge translation concepts and review how to harness their potential to support change management and hasten adoption of telehealth.

Actions:

- Identify and recruit experts in change management, knowledge translation, and capacity building (in and outside of the telehealth field) who will assist with these endeavours.
- Consult with the trilateral Physician Office System Program to learn from their extensive experience in change management.
- In conjunction with health regions and boards, create processes that move knowledge translation theory into practice.
- Complete the Western Health Information Collaborative Telehealth Change Management Project.

Lead	Partners
Provincial Telehealth Committee	Alberta Health and Wellness
Health Regions and Boards	Service Alberta
	Academics, Researchers
	Individuals in public/private institutions
	Western Health Information Collaborative
	Canada Health Infoway

4. Leveraging Technology Infrastructure

Advances in current technology and new innovations are an opportunity and challenge for the Alberta telehealth network. The opportunities presented by Alberta SuperNet, HealthLink, Picture Archiving and Communications System (PACS), the Electronic Health Record (EHR), and primary care networks need to be pursued in order for telehealth to continue to play a role in improving service delivery in Alberta. Telehealth must develop in alignment with and in support of these initiatives.

Interoperability has been a guiding principle of the telehealth network in Alberta. It ensures stakeholders will be able to connect across the province or in the next community. Alberta has provincial standards for videoconferencing that are focused on the health sector and the needs of its users. Part of the work being done to leverage Alberta SuperNet is a project to establish a core Internet Protocol (IP) videoconferencing infrastructure to provide a secure cross-sector, province-wide, fully interoperable "any to any" IP videoconferencing shared service in the province. This work is being done by the Alberta telehealth network in partnership with Alberta Education (also representing Alberta Advanced Education and Technology), Alberta Children's Services, Service Alberta, other ministries, and Health Canada First Nations and Inuit Health Branch.

Alberta's SuperNet will allow for high bandwidth transmission of video, audio, images, and text files among telehealth sites to remote locations at high speed. This will enable high quality telehealth events to occur at lower cost than using telecom carriers. By optimizing use of the SuperNet infrastructure, bandwidth will not be a limiting factor in the adoption of any new telehealth technology or in the development of any new telehealth service. This will be unique in the world.

Early pilot projects in the integration of the Electronic Health Record (EHR) and telehealth will improve the efficiencies of clinicians at both the sending and receiving ends of the telehealth event. The EHR will allow clinicians to access and update the patient's record in real time as the service is provided wherever the patient may be located.

Leveraging Technology Infrastructure Goal in 2006-2009

Telehealth services will be delivered over Internet Protocol networks, enabling seamless cross-sector and intra-sector communication.

Outcomes

- Telehealth will be an integrated system of leading-edge technology used in a wide variety of clinical, educational, and administrative applications.
- Telehealth will be a proof of the wisdom of provincial investments in technology infrastructure and health applications.

Strategies

4.1 Enable health regions and boards to migrate telehealth services to SuperNet.

Strategic Activities:

- Continue to collaborate with other ministries under the lead of Service Alberta to develop infrastructure for videoconferencing over Alberta SuperNet.

Actions:

- Support and guide health sector participation in SuperNet opportunities, including:
  - Determining health region and board readiness, plans, and concerns for migrating existing and new videoconference services to SuperNet.
  - Establishing and maintaining collaborative partnerships with other departments participating in SuperNet.
  - Assisting stakeholders in interpreting both the advantages and concerns related to SuperNet applications and participating in planning committees to ensure health sector requirements are met.
  - Supporting the establishment of core infrastructure to ensure compatibility and benefit to the health sector (e.g. bridging connection of multiple sites and gateways to different networks).

- Participating in a provincial dial plan (an agreement on a common system for numbering videoconference systems, like a telephone number) to enable unique identification of systems and connect to core infrastructure with compatible network technology to access any required services
- Further develop the VC Scheduler to support seamless cross-sector connectivity via SuperNet, including its migration to a sustainable, high availability environment that supports cross-sector applications.
- Collaborate with other jurisdictions as they integrate the VC Scheduler into their operations using change management approaches.
- Assess the potential for non-hospital (e.g. primary care network) access to telehealth on SuperNet.

Lead	Partners
Alberta Health and Wellness	Service Alberta
Provincial Telehealth Committee	
Health Regions and Boards	

4.2 Build a network of distance health service delivery based on reliable, easy-to-use, integrated technology that supports equitable access for patients and efficiency for clinicians.

Strategic Activities:

- Develop the matrix of key interrelationships with other related distance service delivery entities that use communications technology including the Electronic Health Record and HealthLink.
  - Link with current planning activity for provincial Information Management/Information Technology initiatives.
  - Develop a business case/resourcing plan for the integration of Electronic Health Record and telehealth.
  - Evaluate the feasibility of integrating Alberta Netcare resources (registries) into the VC Scheduler application.
- Establish a provincial framework that outlines standards and protocols for communications technology in Alberta.
- Prioritize funding to support next generation technology deployments (including those utilizing Internet Protocol networks) consistent with health system needs, particularly considering priorities for Albertans in rural and remote areas.

Actions:

- Work with Alberta Health and Wellness to develop a plan/roadmap for integration of the Electronic Health Record and telehealth applications.
- Explore collaborative opportunities between telehealth and HealthLink.
- Pilot integration with Electronic Medical Records and Alberta Netcare as appropriate for new clinical telehealth applications.

Lead	Partners
Provincial Telehealth Committee	
Alberta Health and Wellness	
Health Regions and Boards	

APPENDIX A
GLOSSARY

Clients:	All direct and indirect users of the health care system. This includes members of the general public, patients, education participants (who may be patients or clinicians), and health system leaders who support the delivery of health services through telehealth.
e-Health:	Refers to applications using web-based technology (the public Internet, private Intranets, and Extranets). As telehealth applications migrate to web-based and Internet Protocol platforms, definitions of telehealth and e-Health will converge.
Electronic Health Record (EHR):	Alberta's Electronic Health Record (Netcare) is a secure and confidential lifetime record of an individual's key health information, which is available electronically to authorized health care providers anywhere, anytime, and which securely exchanges information between clinics, pharmacies, hospitals, and other points of care to enhance efficiency, quality of care, and patient safety.
Health Authority:	Refers to both regional health authorities (there are nine) and provincial health authorities (there are three).
Health Services:	All activities that directly and indirectly support the delivery of health care; e.g. clinical applications, education, and administrative functions.
Network:	The collection of telehealth endpoints, including sites, technology, and people.
Program:	An existing or planned telehealth service.
Project:	A new telehealth initiative. It may involve a new telehealth program, a new partnership, or any new undertaking pursued by any of the telehealth partners.
Provincial Health Authorities:	The Alberta Cancer Board (ACB), the Alberta Mental Health Board (AMHB), and the Health Quality Council of Alberta (HQCA) are the provincial health authorities.
Regional Health Authority (RHA):	The nine health authorities defined by geographic boundaries, into which the province of Alberta is divided. The RHA corporate names are: Chinook Regional Health Authority, Palliser Health Region, Calgary Health Region, David Thompson Regional Health Authority, East Central Health, Capital Health, Aspen Regional Health Authority, Peace Country Health, and Northern Lights Health Region. They are also referred to as health regions.
Telehealth:	The use of technology to support the delivery of health services, education, and administrative activities at a distance.
Western Health Information Collaborative (WHIC):	A process initiated by the Western Premiers and Deputy Ministers of Health to explore collaborative opportunities with respect to health infostructure initiatives. WHIC partners include representatives from British Columbia, Alberta, Saskatchewan, Manitoba, the Northwest Territories, Yukon, and Nunavut.

APPENDIX B

CLINICAL PROGRAMS IN ALBERTA: PROJECT PORTFOLIO AND CLINICAL GRANT FUND

Project Portfolio

The portfolio is meant to be an evolving document, updated as projects are planned and implemented.

Clinical Telehealth Innovation Program (CTIP): The ultimate goal of the Alberta Clinical Telehealth Innovation Program (CTIP) is to enhance clinical telehealth service delivery and capacity in Alberta. It will enhance access to health services for more people, both in the short term and in the long term as clinical telehealth services are integrated into regular health care delivery.

CTIP has four primary objectives: extension of clinical telehealth services to additional sites, expansion of the scope of clinical telehealth projects, acceleration of implementation of clinical telehealth services, and focused change management assistance for rural Alberta health regions. Work toward these objectives will occur in the context of specific implementation projects within five clinical program areas: Chronic Disease Management; Mental Health; Cancer Care; Continuity of Care and Discharge Planning; and Other Specialized Healthcare Services.

CTIP funding will contribute to 32 telehealth projects across Alberta. More than $3.4 million in new funding will be invested. The Alberta government will contribute more than $1.7 million, and Canada Health Infoway has committed more than $1.7 million.

A CTIP 2 is currently under development. Expected value is about $4 million.

Telestroke Overlay: The Alberta Telestroke Overlay involves using telehealth to support delivery of stroke services for acute care needs, prevention, education, and rehabilitation. It also involves leveraging investment in the Alberta Provincial Stroke Strategy (APSS) to provide new types of clinical services using the planned APSS equipment.

In support of acute stroke care, telehealth technology will be installed in emergency rooms to enable a stroke specialist in a tertiary center to deliver timely assessment even though the patient and the patient's CT scan are located at a primary center. The Telestroke Overlay will make other urgent and emergent services available using the same technology. Benefits from the Stroke Overlay will be realized as services are extended to more sites and a greater number of urgent/emergent clinical services are offered at each site. The Stroke Overlay will enhance use of the APSS equipment implemented in Emergency Department facilities because the equipment will be used to provide other services when it is not in use for instances of stroke. Further benefits will be realized as clinical personnel will have increased opportunities to use the equipment which will increase familiarity with telehealth service delivery and further integrate telehealth into health care delivery.

> The Alberta Provincial Stroke Strategy (APSS) is a joint initiative of all nine health regions; the Heart and Stroke Foundation of Alberta; the Northwest Territories and Nunavut; and the Alberta government. One pillar of the Alberta Provincial Stroke Strategy is Acute Stroke Care.
>
> Based on a model that has been successfully employed in other jurisdictions, the APSS will link primary stroke centers (regional sites that are the first point of referral for patients and usually without stroke specialists on site) with tertiary stroke centers (where stroke specialists are located and deliver care from). Currently there are two tertiary stroke centers in Alberta: one in Edmonton and one in Calgary. The APSS model focuses on the development of at least one primary stroke center in each health region connected to and supported by a tertiary stroke center via high speed telehealth technology.

WHIC Change Management project: Provision of clinical services by telehealth is significantly different than providing services within a traditional clinical setting. It requires shifts in behaviour and attitudes of staff, patients and providers in terms of scheduling appointments, delivering the services, interpersonal communications, and time management. Staff and providers must also learn to operate new technology and to feel comfortable using the technology for clinical service delivery. Change Management activities can facilitate the implementation and adoption of telehealth services by both providers and patients.

To support change management activities within the telehealth community, the WHIC Telehealth Change Management project, through a Canada Health Infoway investment, has worked with stakeholders across Canada to develop a web-based knowledge repository. Stakeholders were involved in providing requirements through a change management

workshop and environment scan in 2006. The repository is hosted by the Canadian Society of Telehealth and can be accessed at www.cst-sct.org/cm.

There are four components to the repository:

1. The Change Management Framework provides general knowledge about change management techniques and commonly used processes to manage change. This section is not specific to telehealth. The Change Management Framework section describes an integrated management approach designed to achieve strategic change objectives.

2. The Telehealth Roadmap provides telehealth-specific information about strategic directions, stakeholder needs, implementation pathways, and clinical practice areas.

3. The Resource Kit contains categorized documents (reports, case studies, policy samples, templates, project plans, communication tools, presentations, etc.) that would be valuable to teams involved with introducing new telehealth services. The resource kit contains materials that directly and indirectly involve change management.

4. Access Security enables general access by anonymous users and restricted access to CST members and other special groups.

As a national resource, the Telehealth Change Management Repository is expected to become a source of knowledge that can be re-used by different jurisdictions when implementing similar telehealth projects. Two direct advantages include reducing re-work and building consistent processes. Through the use of the Change Management Repository, jurisdictions and regions will benefit as projects avoid re-work, reduce delivery risk, and increase the quality and interoperability of their deliverables.

The Western Health Information Collaborative (WHIC) is a process initiated by the Western Premiers and Deputy Ministers of Health to explore collaborative opportunities with respect to health infostructure initiatives. The purpose of the WHIC Telehealth Working Group is to undertake common opportunities and to support strategic initiatives for telehealth within the western provinces and territories. These opportunities and initiatives are to be aligned and coordinated without duplicating national and jurisdictional telehealth groups and their activities. WHIC has explored common opportunities that meet Western Provinces' and Territories' health information needs and that also support the strategic directions and initiatives for health infostructure at the national level.

Strategies for Teaching Obstetrics to Rural and Urban Caregivers (STORC): STORC is a basic obstetric education program developed by a stakeholder committee consisting of representatives from the Northwest Territories and Alberta. Print materials have recently been developed and are starting to be used. The next step is a web-based solution to provide greater access to the learning materials. The web-based solution will enable nurses to access up-to-date materials wherever they can access a computer. The solution will include secure login, email access to a tutor, hyperlinks to related information, and interactive elements such as quizzes and exercises. Detailed planning is underway.

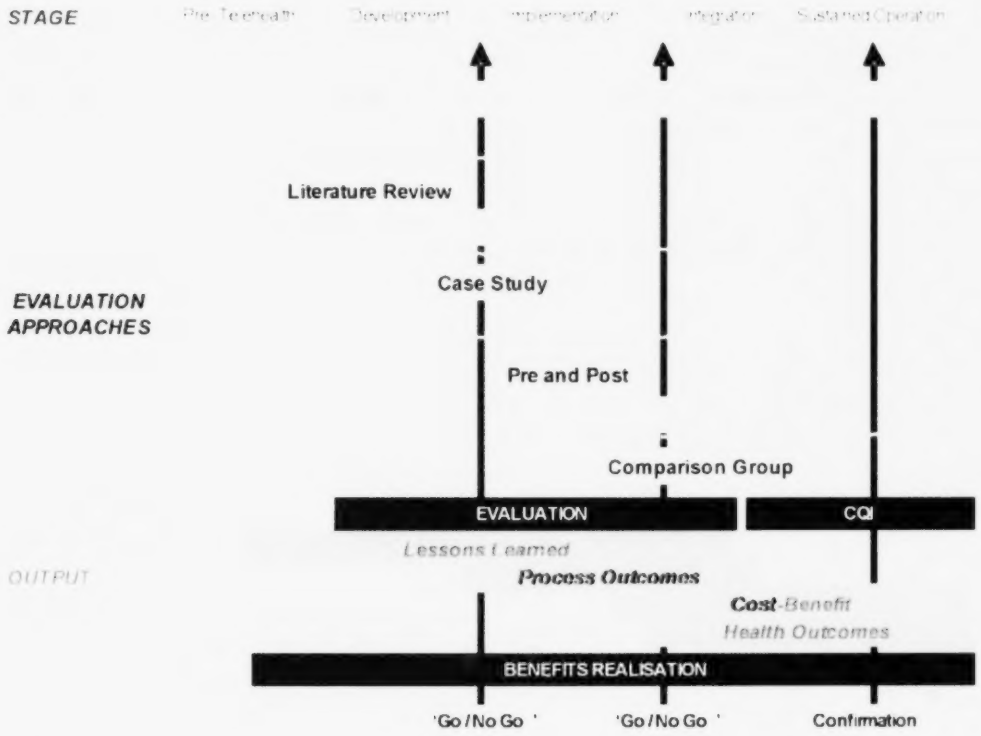
Helping Operationalize Palliative Expertise (HOPE): The overall objective of the project is to make palliative care services equitable across Alberta. Three components are planned for HOPE. One is to build capacity in regions without existing palliative care programs through clinical on-call support and knowledge transfer between regions. A second component is to provide a common framework of palliative service delivery and utilization of clinical tools across Alberta. A third component is to promote innovation in the delivery of palliative care in urban and rural settings to maximize clinical outcomes by using enhanced technology and electronic assessment tools. Planning is underway to develop a detailed project plan and budget.

Clinical Grant Fund

The Clinical Grant Fund was developed to provide seed funding for telehealth projects. The focus is on clinical telehealth, and the fund supports development, adoption, integration, and innovation of clinical telehealth applications and programs in Alberta. Projects are identified through calls for proposals and are assessed for potential to enhance health service delivery for Albertans and improve access to health services as well as value for investment. Approved projects were ranked and received funding according to the amount available. (Press releases are available on http://www.health.gov.ab.ca). The Clinical Grant Fund has supported more than 50 clinical programs.

The framework developed in conjunction with this business planning process has been designed to (a) facilitate the capture of project difficulties, lessons learned, and recommendations on a per project basis, and (b) offer guidance through providing essential definitions, a description of recommended generic data collection methods, and a reporting template. To complement the framework, guidelines have been set out to raise the understanding of key topic areas for people who are not academic researchers or evaluation experts.

Telehealth services pose unique challenges for evaluators because they are not homogeneous and can be considered in distinct and disjointed terms, e.g. as medical technologies, as treatments, as organizational information systems, as change management events, or as community information services. Also the technologies used are often not well established and sometimes in prototyping phases. As a result, the framework has been designed to narrow the recommended options for telehealth evaluation. Within this framework, specific recommendations for outcomes and measures can be incorporated.



APPENDIX C

BUSINESS PLAN COMPANION PROJECTS

Evaluation Framework

The framework developed in conjunction with this business planning process has been designed to (a) facilitate the capture of project difficulties, lessons learned, and recommendations on a per project basis, and (b) offer guidance through providing essential definitions, a description of recommended generic data collection methods, and a reporting template. To complement the framework, guidelines have been set out to raise the understanding of key topic areas for people who are not academic researchers or evaluation experts.

Telehealth services pose unique challenges for evaluators because they are not homogeneous and can be considered in distinct and disjointed terms, e.g. as medical technologies, as treatments, as organizational information systems, as change management events, or as community information services. Also the technologies used are often not well established and sometimes in prototyping phases. As a result, the framework has been designed to narrow the recommended options for telehealth evaluation. Within this framework, specific recommendations for outcomes and measures can be incorporated.

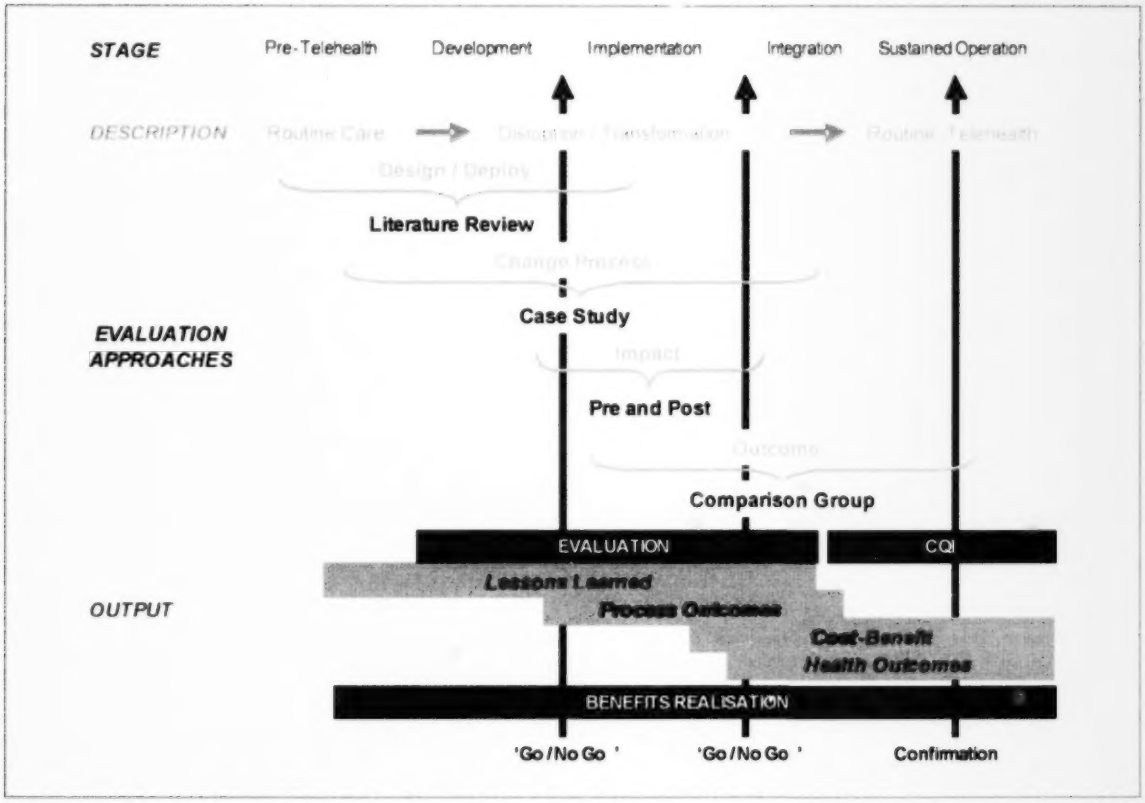


FIGURE 1: RECOMMENDED EVALUATION FRAMEWORK

A Framework for the Economic Analysis of Telehealth Services in Alberta: A Case Study in Clinical Geriatrics

Leigh Melanson[1], Blayne Iskiw[2], Catherine Keenan[3], Dr. Lilani Kumaranayake[1], Dr. Nicola Shaw[4], Dr. James Silvius[3], Sharlene Stayberg[5]
[1]Dalhousie University, Dept. of Economics; [2]Capital Health Region; [3]Calgary Health Region; [4]iCARE, University of Alberta; [5]Alberta Health and Wellness

Synopsis

This project will provide an applicable framework for evaluating program-level costs associated with a range of telehealth initiatives. Once completed it may be employed by various organizations across the province to support the decision-making process surrounding allocating health resources toward a variety of telehealth initiatives

To better demonstrate the framework's applicability, the field of clinical geriatrics has been selected as a case study. Tele-geriatric cost and utilization data will be collected for the purpose of populating the framework and performing a full cost-analysis. Clinical geriatrics was chosen as a result of its sufficient utilization/transaction levels necessary to meet the sample-size requirements for clinical activity maturity. Moreover, tele-geriatric programs are currently available in multiple health regions across the province, and have a strong potential for future growth and expansion.

The objectives of this research are highlighted below:

1. Develop a costing framework for the data collection and measurement of program-level costs associated with telehealth programs and initiatives.

2. Undertake a cost analysis of tele-geriatric services in Alberta, by determining average and total costs associated with delivering geriatric video consultations in five representative health regions.

3. Examine if there exists economies of scale and/or scope associated with adding additional clinical activities and/or increasing the frequency of telehealth activity.

4. Make recommendations regarding strategies for improving data collection methods and program efficiency, as well as provide a summary of methods for the measurement of program benefits.

The tele-geriatric cost analysis will involve the confirmed participation of the following five Alberta health regions: Capital Health, Calgary Health Region, Chinook Regional Health Authority, David Thompson Regional Health Authority, and Peace Country Health. The primary role of the health regions is to provide guidance in the selection of delivery models (see below), as well as aid in data collection. Four tele-geriatric delivery models were selected to represent the unique delivery designs within the five regions. Each model was required to consist of one tele-geriatric provider site and one service receive site. The models were selected with the aid and recommendation of those representing each health region, as well as with guidance from project members in association with Alberta Health and Wellness.

The tele-geriatric cost analysis will be carried out from a provider perspective; only those costs borne by Alberta healthcare providers will be incorporated in the analysis, resulting in an estimate of the total costs accrued by the healthcare system in the provision of tele-geriatric services. The study is retrospective in nature and will include data between fiscal year 2003/04 and fiscal year 2006/07. The analysis methodologies have been designed using previously developed methods to estimate healthcare program costs, and are comprised of three steps:

1. Identify and Measure Costs:

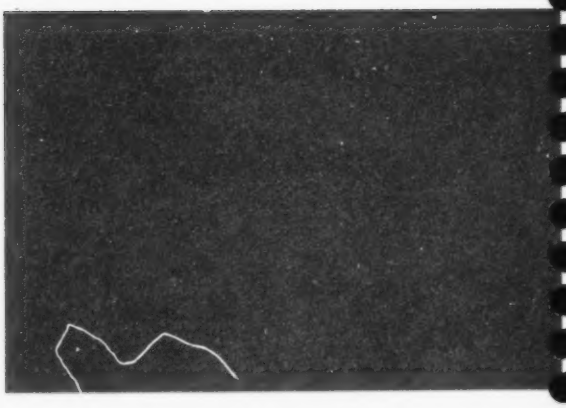
The inputs unique to each delivery model will be collected by identifying and measuring all resources (human and capital), decisions made, time spent, and people contacted throughout the entire tele-geriatric delivery process. This step will employ process mapping (i.e. business process flowcharting) as the primary data collection tool. An individual process map will be constructed for all four models in order to accurately identify the resources and time-allocations specific to each one.

2. Value Costs:

Using a variety of financial records collected from separate organizational levels (i.e. provincial, regional, and site level), data will be collected with support and cooperation of the participating health regions and individual delivery sites.

3. Evaluate Costs:

The average cost per session will be calculated using the outcome measures (service utilization data). Univariate and multivariate sensitivity analyses will be undertaken to examine the influence of data uncertainty on the cost results. The primary source of utilization data will be through the VC Scheduler.



Chinook Health

calgary health region

D|HR
DAVID THOMPSON HEALTH REGION

east central health

Capital Health
EDMONTON AREA

Aspen Regional Health

Peace Country Health

Northern Lights
HEALTH REGION

AMHB
ALBERTA MENTAL HEALTH BOARD
...Advancing Mental Health

Alberta Cancer Board

Contact: **Alberta Telehealth**
Ph: 780.415.2494
www.albertatelehealth.com

Alberta Telehealth | Alberta | Provincial Telehealth Committee | Alberta Telehealth Coordinators Committee